SURFACE COMBATANT LAND ATTACK WARFARE GUIDANCE

The Surface Combatant Navy is evolving into the most capable ***offensive*** maritime force in history. Building on a legendary and historically strong Maritime Dominance foundation, the Surface Combatant Navy is developing and perfecting weapons, sensors, and tactics to project offensive force, master Land Attack Warfare, and dominate the littoral Battle Space. While positioning ourselves to be the dominant force in the littoral, there is no shortage of challenges demanding innovation and, in some instances, cultural change. The United States Marine Corps *Operational Maneuver from the Sea (OMFTS)* and *Ship-to-Objective Maneuver (STOM)* are watershed concepts that drive surface combatant requirements. With the advent of the lighter, more mobile Army forces, our Navy Land Attack requirements become ever more critical and particularly relevant in the 21st century Battle Space. Land Attack Warfare will make the Surface Combatant Navy a force to be called upon across the *entire* spectrum of the battle, from preparation of the battlefield through OMFTS/STOM and the full land warfare campaign. With the introduction of an offensive, long-range, accurate, responsive, and lethal capability, the mission area of Land Attack Warfare will add a dimension not previously resident in Surface Combatants.

The link between the Surface Combatant Navy and the Marine Corps is inviolate, with the projection of firepower ashore the heart and soul of the Navy-Marine Corps team. We will continue to pursue this requirement with unfailing allegiance to the "***Means***" of our Maritime Concept, namely Forward Presence and Knowledge Superiority. Further, we will embrace the indispensable tenets of Joint C4ISRT in a Netcentric environment, paying close attention to the ever-pressing need for interoperability with our Coalition partners. We must continue to cultivate and refine that team to the point where we provide a single synergistic entity seamlessly joined in a cohesive unstoppable force. Discussions with other services have highlighted the fundamental need for cooperation now if we are to form a true Joint Force in the littorals. The Joint/Coalition nature of battle and programmatic realities demand that we work in lock-step with those that will fight the battle on the ground. Further, there are tremendous synergies to be realized in weapons research and development and ammunition stockpiles – synergies that must optimize programmatic resources. Wherever possible, we need to seek mutual cooperation among the Joint

forces in building our warfighting capability. This memorandum will be the roadmap for the Surface Combatant Navy of the future and it will set the course for our thrust into the littorals.

Defining Land Attack Warfare

Land Attack Warfare is the integrated employment of available sensors, weapons, and forces (to include Joint and Coalition) for projecting combat power into the ground portion of the battlespace to protect vital national interests and achieve national and military objectives. Employed forces can include sea, air, and ground-based assets. For the Surface Combatant, Land Attack Warfare encompasses the twin missions of Naval Surface Strike and Naval Surface Fire Support. **Naval Surface Strike (NSS)** is the destruction or neutralization of enemy targets ashore through the use of conventional weapons provided by surface combatants. This includes strategic, operational, and tactical level targets from which the enemy is capable of conducting operations against US or Allied forces. **Naval Surface Fire Support (NSFS)** encompasses fires provided by Navy surface gun, missile, and electronic warfare systems in support of a unit or units tasked with achieving the commander's objectives.

Surface Combatant Land Attack Warfare Roles

Surface Combatants must be fully capable and responsive across the entire spectrum of warfare, from major theater war to small scale contingencies and noncombatant evacuation operations; from multi-ship coordinated battlegroups to independent operations. Surface Combatant capabilities must be robust and scalable – not just focused on one threat that may obsolesce. Robust and scalable systems argue for multi-mission capability, the ability to degrade gracefully, and the ability to rapidly import new technology.

Characteristically, it is envisioned that Surface Combatants will perform one of the following four roles while conducting Land Attack Warfare missions:

NSFS Supporting Unit Role: The Supporting Unit will provide fires in support of maneuver forces operating or preparing to operate ashore. This may consist of one or more ships, each individually receiving orders to fire from the fire support coordination agency (SACC, FFCC, FSCC, FSC, TSC, LAC) of the supported unit or directly from a forward observer.

NSFS Controlling Unit Role: The Controlling Unit will direct and control the fires of two or more Surface Combatants in support of maneuver forces operating or preparing to operate ashore. This will consist of multiple ships with one assigned control. The Controlling Unit will receive requests for fire support from fire support coordination agencies, process the requests in accordance with appropriate commander's guidance and Rules of Engagement (ROE), and assign one or more ships under its control to provide the requested fires.

NSS Single-Ship Role: A single Surface Combatant operating alone, either by design or in anticipation of a greater force arriving in theater, must be capable of planning, targeting, controlling, synchronizing, coordinating, deconflicting, executing, and assessing own-ship fires. The ship will receive mission orders, commander's guidance, and ROE from higher authority with no higher level on-scene commander or fires coordinating element in the area of operation. The ship will execute fire missions based upon surveillance and targeting data provided by reconnaissance and surveillance elements ashore, organic or off-board targeting systems, or higher authority. The ship will have the authority to determine which targets to engage, with what weapons, and to what degree, consistent with mission orders, existing ROE, and commander's guidance. The advent of Land Attack weapons capable of reaching hundreds of miles inland make this a desirable capability in the highly dispersed, forward deployed navy of the 21st century. *This role is consistent with the desired effect of "...anytime...anywhere," particularly in support of a rapidly developing situation requiring a halting or delaying action. This is the very essence of what it means to be "Navy" and reflects strong Navy traditions dating back to John Paul Jones and Stephen Decatur. This is also consistent with the Netcentric Navy from which distributed firepower will be generated.*

NSS Multi-Ship Role: In this role, a single Surface Combatant may be required to plan, target, synchronize, coordinate, deconflict, execute, and assess the results for a group of Surface Combatants operating in concert apart from a Battle Group or other controlling agency ashore while conducting a NSS mission.

Surface Combatant Force Objectives

The following four areas will serve as the enablers for the all-important fifth area – Killing Power:

Weapon Systems Design

A 16 June 1999 letter from the Marine Corps Combat Development Command (MCCDC) provides a very specific NSFS system response time: two-and-a-half minutes from the receipt of a call for fire until ordnance is fired or launched. To this end, it is imperative we build the capability to perform rapid mission planning and execution into our Surface Combatants. This capability must be robust, scalable, flexible, and interoperable not only with existing shipboard systems, but across the broad spectrum of the Joint and Coalition warfighting arena. Further, shipboard systems must meet reliability standards that reflect optimal manning and sustained forward-deployment.

There is every reason to assume that the great leaps in technology we have realized in the last five years will continue in the first quarter of the 21st century. To this end, system design must account for technology insertion that keeps Land Attack Warfare weapon systems current for years to come. This is an affordability and effectiveness issue (which translates into performance) that must be fully embraced if Surface Combatants are to remain relevant over their intended lifespan. Managing lifecycle costs over the intended lifespan should be a key performance parameter in weapon systems design.

Perhaps the most important change required to the Land Attack Warfare System design and acquisition process, and one that has been historically ignored, is an emphasis on the Sailor as essential to the design process. A cultural change is required. Land Attack Warfare system design must stress Human Systems Integration based on Human Centered design principles. A continuation of business as usual (treating Sailors as a "free" labor source in general, and "fixing" design problems with Sailors after the fact specifically) is counter to Optimal Manning. Failure to rectify this situation will render Surface Combatants incapable of sustaining prompt and continuous operations in the littoral. In the long term, this cultural change to system design will be no less significant than the transition from sail to steam. I am convinced our ability to effectively and successfully employ Land Attack Warfare systems will directly reflect our commitment to Human Centered Design, Human Systems Integration and Optimal Manning. Accordingly, every system must be developed with these principles and processes foremost in mind.

Manpower, Personnel, and Training

The Surface Warfare Community must fundamentally change its cultural perspective on Manpower, Personnel, and Training in order to meet the pressing demands of the 21st Century Surface Combatant force. Again, Human Centered Design/Human Systems Integration and Optimal Manning are key to the successful design and development of Land Attack Warfare systems. These innovative design processes and manning concepts have major implications for current manpower, personnel and training policies, programs, and procedures. Therefore, we must start now developing a comprehensive plan covering the spectrum of Land Attack Warfare Mission Area Training. This plan must address training requirements from individual operator/maintainer pipeline training through Land Attack Warfare Watch Team qualification, certification, and proficiency training and Battle Group and Joint Force Mission Area Training. The plan must also include off-ship planners, staff personnel, and coalition partners, and speak to C4I/IT proficiency training requirements. As a matter of priority, the plan should stress commonality across Land Attack Warfare systems and elimination of training stovepipes wherever feasible. Finally, the plan must address the necessary balance between embedded/organic training and shore-based training. A key issue yet to be resolved centers on the capability of our new weapons. We must clearly define and determine simulated vs. live fire training /range requirements. Having said that, it is a cultural imperative that live fire exercises on a landed range remain a part of proficiency training.

Logistics and Sustainment

Replenishment at sea is sustainment and must remain the cornerstone of "...anywhere...anytime." But doing business the old way (labor-intensive replenishment at sea) will not suffice on optimally manned ships. Automation, palletization, and modularization not only reduce the Sailor workload, but make replenishment at sea more efficient and less time-consuming. The entire spectrum of replenishment needs to be viewed from a systems approach. We must think of the shipboard magazine as just one component of a complete ammunition supply, storage, and retrieval *system*. Technology and innovation – thinking future, not past – will build towards a rapid and sustainable replenishment at sea capability. If we are to be

sustained contributors across the entire spectrum of the battle, we must have the capacity to address Volume Fires needs. Automated replenishment at sea will be an enabler. We should push as much of the logistics and sustainment piece as far forward as possible, maintaining inventory levels sufficient to sustain the fleet in any eventuality.

The ZUMWALT Class Destroyer (DD 21 Class) represents the revolutionary cornerstone in building the Navy of the future. Lifecycle management of that "system" should be the model in terms of planning and executing maintenance. This, along with the maintenance of the industrial base for legacy system support, is an affordability issue that must be addressed.

C4ISRT

The 21st century will be, from a warfighting standpoint, the Netcentric century. We must embrace and work towards netcentricity across all programs, across all platforms, all the while paying close attention to Joint/Coalition interoperability and system commonality (Great leaps in technology will facilitate this, but only if we direct that this functionality be a part of development.). To be unable to fight collaboratively in a Joint/Coalition environment may mean not being able to fight at all.

Advances in technology will enable us to fight in a collaborative, netted sensor environment sharing a common operational picture that builds battlespace awareness. We must transition from stove-piped, time-late, stand-alone systems, to real-time, collaborative, networked planning and execution systems capable of conducting timely simultaneous attacks on multiple targets using state-of-the-art communications with troops on the ground operating on-the-move at over-the-horizon ranges. A collaborative environment implies sensor management. For the Surface Combatant on scene to be relevant, it must have a scalable total system to ensure the viability of the single ship role. Forward-deployed ships frequently operate separately from the Battlegroup. They must be able to take advantage of their ability to be first on station, using their own sensors, or receiving data from Coalition, Joint, or national air, land, and space assets. These ships will often provide the first fire support to expeditionary forces, the instrument of national strategic will in a strike role, or the lone support to non-combatants in a crisis situation. Advances in weapons, combined with current and potential advances in communications capacity, miniaturization,

automation, computing power, and memory capacity, demand that we take advantage of the Surface Combatant's ability to act alone. At the same time, the entrance into and exit from the architecture by any one entity must be seamless.

Technology must be harnessed and engaged now to develop the ability to address time critical/time sensitive targets. This will necessitate the requirement to be able to take advantage of both organic and non-organic sensors. Further, these sensors, in collaboration with target mensuration systems, must be capable of generating Target Location Errors necessary for precision guided munitions.

In order to address time critical/time sensitive targets (and to meet the requirements of the Marine Corps), real-time 4D Battlespace deconfliction (which is facilitated by the common operational/tactical picture) must be a part of any collaborative system.

Killing Power

The foregoing guidance is but a prelude to the single most important part of the vision – the killing power of the Surface Combatant in the 21st century. The Marine Corps requirements vis-a-vis range are specific. We will continue to push the envelope to present killing power at the ranges required, and at no time will the accuracy and precision of precision guided munitions be compromised. We will pursue, with our Joint and Coalition partners, those technologies for the Surface Combatant that will allow us to address both moving and hardened and deeply buried targets, as these target sets pose a significant threat to maneuver forces ashore. We should aggressively pursue technologies in our warheads that significantly enhance the lethality of our family of munitions. Additionally, the advent of precision guided munitions does not obviate the need for fires in volume. Our family of munitions must include an accurate round that can produce volume effects at range and be affordable enough to sustain requisite inventory levels. This is best illustrated in a lesson from the Falklands when a ship delivering fire support, after the usual spotting of individual rounds, was given the order "100 rounds, fire for effect." Having never fired more than 5 rounds in this phase during training, the ship asked to "Say again," and again received the same order. Upon completion of the 100 rounds, the ship gave the obligatory "Rounds complete." What followed from the forward observer speaks volumes for the Volume Fires requirement. It was "Roger. Repeat."

Finally, the ability to address time critical/time sensitive targets will drive targeting, mission planning, and time of flight issues. Technologies that reduce the time delays inherent in the kill chain should be foremost in our minds.

Land Attack as a Warfare Mission Area

Land Attack Warfare is the new warfare mission area for the 21st century. As such, it should be formalized and integrated as a core naval mission throughout all appropriate instructions and guidance documents. It will become a key enabler for the "***Ways***" of the Navy Strategic Planning Guidance - Battlespace Control, Battlespace Attack, and Battlespace Sustainment, with a significant part of the burden of responsibility resting squarely on the capabilities of Surface Combatants. The development of Land Attack Warfare weapon systems and munitions, our ability to reach far inland and directly and decisively influence events ashore, will be the major contributor to the achievement of our "***Ends***" – Regional Stability, Deterrence, Timely Crisis Response, and Warfighting and Winning.

Maritime Power Projection in the 21st century will include Surface Combatants and I consider what I have outlined above to be the surface Navy's strategic imperative.